



# GBX SEEDFIBER™

Microbiome-Boosting Seed  
Powder\*



**amare**®  
GLOBAL

THE MENTAL WELLNESS COMPANY

## TECHNICAL DATA



# GBX SEEDFIBER™

GBX SeedFiber™ is the next generation approach to optimizing the gut-brain axis. This phytobiotic rich formula contains seeds as sources of natural microbiome-boosting fibers, helping you feel fuller, longer.\*

## KEY INGREDIENTS

**AHCC®** — Active Hexose Correlated Compound of cultured mushroom mycelia extract that is rich in alpha-glucans. It is manufactured through an extended lipid culturing process that results in incredibly unique active components. It has over 30 human clinical studies, and is the #1 top immune support ingredient, with effects that help with innate and adaptive immune response.

- Studies have shown that AHCC® can reduce the production of glucocorticoids in case of stress. AHCC® also improves mood and energy in people suffering from chronic fatigue.
- AHCC® stimulates the activity of several types of immune cells: NK cells (involved in the defense against viral infections and cancer cells) and dendritic cells (regulate immune response).
- AHCC® favors immune function and improves our protection against various pathogens: Candida albicans, Pseudomonas, Staphylococcus aureus, Influenza virus, West Nile virus and Papillomavirus.
- AHCC® is beneficial for gut health; a study has demonstrated its capacity to reduce intestinal inflammation, and to favor the development of a healthy gut microflora (more Bifidobacteria, less Clostridium).

**Cold-Pressed Seed Powder** — Cold-pressed seeds are the most innovative process to attaining the most quality seed powder. Many companies use a heat-pressed process that exposes the seeds to heat and thermogenic profiles that alter the profile and quality of the seed. (The heat-pressed process provides MORE of the seed powder per seed at a lower quantity, and the cold-pressed seed powder provides substantially LESS of the seed powder per seed, but at a HIGHER quality.)

- **Sunflower Seed** — One of the top natural sources for good fats, copper, selenium, folate and vitamin E. Helps with cholesterol levels, bone health, heart health, detoxification, supporting skin and a good source of protein. Vitamin E and selenium help protect your cells from damage.
- **Cucumber Seed** — Great source of fiber and beta carotene, which helps with immunity, skin and eye health.
- **Cranberry Seed** — Good source of vitamin E, omega-3, -6 and -9, and also acts as a antioxidant to protect your body from stressors.
- **Concord Grape Seed** — Great natural source of vitamin A and E, which is crucial for skin, circulation, cholesterol, and has antioxidant effects.
- **Black Cumin Seed** — Boosts immune system, B vitamins and antioxidants.
- **Blackberry Seed** — Rich in omega-3 (alpha liolenic acid) and omega-6 (linoleic acid) fats good for heart and brain health.

# CLINICAL STUDIES

## **Epilepsy Mikhailichenko N. Estimating Efficacy of AHCC as Immune Therapy for Patients Diagnosed With Pharmacoresistant Epilepsy. Presented at the 22nd International Congress on Nutrition and Integrative Medicine (ICNIM), July 2014.**

### **Topic:**

What effect does active hexose correlated compound (AHCC) supplementation have in patients diagnosed with pharmacoresistant epilepsy, to what degree is there a role in the immune system disease pathogenesis, and what is the efficacy of immune therapy?

### **Background:**

Evidence of interaction between epilepsy and immunologic disorders has been growing over the last several decades. Clinical syndromes of secondary immunodeficiency have been found in 70–80% of cases involving mental patients with various severities of illness. Immunologic mechanisms may play a significant role in an integrated theory of epilepsy, and since infectious diseases such as ARVI, ENT diseases, urinary tract infections, and herpetic infections often attack patients with epilepsy, immune-correcting drugs have become a basis for treating these types of psychoimmunoneurological diseases. This study examined patients diagnosed with pharmacoresistant epilepsy and evaluated the effect of an immune-system role in pathogenesis of the disease and the efficacy of immune therapy using AHCC as a dietary supplement.

### **Study Type:**

Human clinical intervention trial

### **Study Design:**

Case studies of several children with pharmacoresistant epilepsy were examined using clinical methods. Immunologic tests were performed to assess clinical syndromes of secondary immunodeficiency and to identify multiple defects in the immune system. Immunologic examination was performed according to standard methods. Immune status was measured by percentage of T- and B lymphocytes in peripheral blood (total number of lymphocytes, percentage and absolute number of mature T cells (CD3+), T helpers (CD4+), and T killer-suppressors (CD8+), B lymphocytes (CD20+), and immunoregulatory balance between CD4+ and CD8+ concentrations. In addition, serum immunoglobulin A, G, and M (IgA, IgG, and IgM) were measured. All patients received combined treatment including base line antiepileptic and immune therapy using AHCC-2 for 1 month.

### **Subjects:**

Several children

### **Dosage:**

Not reported

**Results:**

Children with pharmaco-resistant epilepsy had decreased mature T lymphocytes (CD3+) and T cells and an imbalance in the subset. The amount of CD3+ T lymphocytes in the epilepsy group was 42.42% ± 14.65%, which is 82.8% of average. The amount of CD4+ T lymphocytes was 71.6%, and cytotoxic CD8+ was 112.7%. The CD4+/CD8+ lymphocytes subset distribution and regulatory balance had a ratio of 1.28 ± 0.55, which was below average or only 58.6% of the average value. After AHCC intake, patients had positive changes of peripheral T cell pool (CD3+) and T helpers (CD4+). They also showed an improvement and increase in the ratio of T suppressors-killers (CD8+) to lymphocytes to 1.4. Due to increases in the CD4+ lymphocytes subset, the immunoregulatory balance of the CD4+ to CD8+ ratio improved. There was a 35% decrease of frequency and intensity of epileptic seizures. The patients' bodily health status and physiological functions also improved.

Conclusion "Patients with pharmaco-resistant epilepsy have been found to have significant neuroimmune disorders, according to the results of immune cell testing. AHCC immunotherapy improves immune status by increasing the amount of T lymphocytes, by regulating the subset balance, and by activating phagocytes and humoral function. In addition, AHCC treatment decreased neurological immune dysfunction by regulating the amount of serum immunoglobulins, indicating a reversal of the autoimmune process that has significance in the development of epilepsy."

**HPV Smith, Judith A., Pharm.D., BCOP, CPHQ, FCCP, FISOPP, Jonathan Faro, M.D., Yu Bai, M.D., Barbara Rech, RN, Anjali Gaikwad, M.S., MB (ASCP), Joseph A. Lucci III, M.D., Joseph A. Rodriguez, M.D., Teresa T. Byrd, M.D. Evaluation of Active Hexose Correlated Compound (AHCC) for the Eradication of HPV Infections in Women With HPV Positive Pap Smears. Presented at the 11th International Conference of the Society for Integrative Oncology, Houston, TX, October 26–28, 2014.**

**Topic:**

Can women with HPV-positive Pap tests who don't show signs of abnormal cytology (abnormal cervical cells) and are treated with active hexose correlated compound (AHCC) undergo clearance of the infection?

**Background:**

HPV DNA has been detected in over 99% of cervical cancer patients. HPV infection is one of the most important predisposing factors of cervical cancer, though not the only one. HPV appears to be an important cofactor in the development of dysplasia and cancer, but it does not cause either condition by itself. Smoking, drinking alcohol, and a poor diet may also be important cofactors. There is currently no known effective medicine or supplement for eradication of HPV infections. Previously completed preclinical in vitro and in vivo mouse data that suggested AHCC will eradicate HPV in 16 out of 18 infections attributed this to the modulation of the expression and signaling of interferon alpha and beta. It was suggested that AHCC may help prevent subsequent HPV-related cervical cancers. The virus infects epithelial and mucosal surfaces and is a very common viral infection — 230 subtypes of HPV have been identified, including 100 human subtypes. Fifteen of the human HPV subtypes are carcinogenic and include the common subtypes: HPV 16, 18, 31, 39, and 41. According to the U.S. Centers for Disease Control and Prevention, several other cancers are related to HPV through sexual transmission, including 95% of anal cancer, 60% of oropharyngeal cancer, 65% of vaginal cancer, 50% of vulvar cancer, and 35% of penile cancer. The primary objective of the pilot study was to confirm the preclinical findings to determine whether AHCC is effective in eradicating HPV infections in women with negative-oncology Pap tests. AHCC is available over the counter as a nutritional supplement that functions by improving the innate immune system. Human and preclinical studies have shown that AHCC increases the number and/or activity of natural killer cells, dendritic cells, and cytokines. These help the body fight off infections, including those caused by viruses, and help block tumor growth.

**Study Type:**

Human intervention dose-finding pilot study

**Study Design:**

Case studies involving HPV-positive women treated orally with the extract AHCC once daily for up to 6 months. Patients who had documented persistent HPV-positive infections for greater than 2 years but were otherwise healthy and met the remaining eligibility criteria were enrolled in the study to evaluate the effectiveness of 3 grams of AHCC by oral administration to eradicate HPV. The regimen was repeated every month until the patient tested HPV negative or until 3 months of active treatment had elapsed.

Patients who tested positive after 6 months of treatment were considered treatment failures. HPV testing was completed with the Cervista® HPV HR Test (Hologic Inc., Bedford, MA) once a month, and a 2 mL blood sample was drawn for research purposes to monitor immune markers for response.

**Subjects:**

10 women with HPV-positive status

**Dosage:**

3 g, once a day on an empty stomach

**Results:**

Five subjects achieved a negative HPV test result — 3 with confirmed eradication after stopping AHCC — with the remaining 2 responders continuing on the study.

**Conclusion:**

“The preliminary results from this pilot study confirm previous preclinical findings that AHCC appears to be effective for elimination of HPV infections. These results will justify further reinvestigation. A formal phase 2 randomized, placebo-controlled study is underway at UTHealth–University of Texas Medical School at Houston.”

## Journal of Evidence-Based Complementary & Alternative Medicine Takanari J et al. Effects of Active Hexose Correlated Compound on the Seasonal Variations of Immune Competence in Healthy Subjects. 2015. Jan; 20(1):28–34.

### Topic:

What is the effect of active hexose correlated compound (AHCC®) on immune competence in human subjects?

### Background:

The immunocompetent cells include lymphoid cells (B cell, T cell, natural killer cell, etc.), granulocytic cells (eosinophil, neutrophil, basophil, etc.), and antigen-presenting cells (macrophage, monocyte, dendritic cell, etc.) and are affected by various factors including aging, stress, malnutrition, and various additional stressors. Seasonal changes can alter the immune function, especially with decreases of immune components during winter, which is evidenced by infectious diseases occurring more frequently in winter correlated with air temperature. The nasal airway is exposed to cold and cools down, reducing the mucociliary clearance and compromising the immune response of the nasal airway. In addition, sympathetic nervous activity is stimulated, increasing the number of granulocytes, and more adrenaline and noradrenaline are secreted from the adrenal gland. The number of natural killer cells decreases by adaptive response to low temperature in winter. This study evaluated the effects of active hexose correlated compound intake on immune competence in healthy volunteers.

### Study Type:

Randomized, double-blind, parallel group, placebo-controlled human clinical intervention trial

### Study Design:

Thirty-four subjects were randomized to receive placebo or AHCC for 4 weeks in early winter. All subjects took 4 capsules daily of active hexose correlated compound (250 mg/capsule) or placebo (250 mg dextrin only/ capsule) for 4 weeks between November and December. All subjects underwent peripheral blood testing and answered a questionnaire by the visual analog scale method. Natural killer cell activity was assessed by chromium-51 release assay to measure radioactivity. Immune score was done by lymphocyte subset analysis by a flow cytometric method for evaluating comprehensive immune strength by scoring various immune indexes, including the number of T cells, CD8 $\beta$  and CD28 $\beta$  T cells, naive T cells, B cells, natural killer cells, CD4/CD8 T cell ratio, and naive/memory T cell ratio. The complete blood count assessed for red blood cells, hemoglobin, hematocrit, platelets, white blood cells, and differential counts of white blood cells (neutrophil, lymphocyte, monocyte, eosinophil, and basophil).

### Subjects:

34 subjects.

### Dosage:

1 g/day delivered orally

**Results:**

Natural killer cell activity significantly increased in both groups during the study period. The natural killer cell number, however, was not altered in the active hexose correlated compound group, while the placebo group showed remarkable decline. In addition, the score of immunological vigor, an index of total immune competence, was maintained in the AHCC group, although that of the placebo group decreased during the test period.

**Conclusion:**

"The results suggest that continuous use of AHCC maintained immune competence against seasonal changes during winter."



**Healthy Adults Nutrition and Cancer Terakawa N, Y Matsui, S Satoi, H Yanagimoto, K Takahashi, T Yamamoto, J Yamao, S Takai, AH Kwon, Y Kamiyama. Immunological Effect of Active Hexose Correlated Compound (AHCC) in Healthy Volunteers: A Double-Blind, Placebo-Controlled Trial. 2008. 60(5):643–651.**

**Topic:**

Does AHCC (active hexose correlated compound) have an effect on immune responses in healthy volunteers?

**Background:**

Biological response modifiers (BRMs) are substances that stimulate the body's response to infection and disease. Attempts have been made to treat cancer with BRMs, but their clinical efficacy has not been clearly confirmed. AHCC has had numerous positive clinical results on cancer patients without any adverse effects but has not been investigated for its effect on immune response in humans.

**Study Type:**

Human clinical intervention trial

**Study Design:**

Double-blind, randomized, placebo-controlled: Subjects were treated with AHCC daily for 4 weeks. Researchers took blood samples at base line and again after 4 weeks. The number of circulating dendritic cells (both DC1 and DC2 cells), natural killer cells, and CD4+/ CD8+ T lymphocytes was measured by flow cytometry. In addition, other immune function parameters were measured.

**Subjects:**

21 healthy volunteers

**Dosage:**

3 g of AHCC per day (n = 10) or placebo (n = 11)

**Results:**

Volunteers supplemented with AHCC had the following significant changes: • Greater number of total DCs than at base line and compared with control. • The number of DC1 cells was greater after AHCC intake than at base line, and the AHCC group had a tendency to have higher DC1s than control. • DC2s were significantly increased after 4 weeks compared with control. • The allo-stimulatory activity of DC1s was also increased after intake compared with control as measured by the mixed lymphocyte reaction.

**Conclusion:**

“These results suggest that AHCC could be an effective modulator of immunological function in patients with cancer. AHCC acts as a promising BRM.”

**Healthy Adults Journal of Nutritional Science and Vitaminology Spierings E, H Fujii, B Sun, T Walshe. A Phase 1 Study of the Safety of the Nutritional Supplement Active Hexose Correlated Compound, AHCC, in Healthy Volunteers. 2007. Dec; 53(6):536–539.**

**Topic:**

Is AHCC (active hexose correlated compound) safe and tolerable in healthy subjects?

**Background:**

AHCC has been used for many years as a dietary supplement to enhance the immune system and in clinical trials as adjunctive treatment in hepatocellular cancer. Its safety has been previously based on anecdotal reports and its use in clinical practice. Phase 1 clinical trials are used to make the initial safety assessment of compounds with potential medical uses.

**Study Type:**

Human clinical intervention trial.

**Study Design:**

Phase 1 clinical trial: Subjects were treated with AHCC daily for 14 days. Laboratory data were obtained at base line and after 14 days of exposure to AHCC, and adverse events were monitored by a nondirected review of systems questionnaire 3 times during the trial.

**Subjects:**

26 healthy male or female subjects between 18 and 61 years of age.

**Dosage:**

9 g of AHCC per day (liquid form)

**Results:**

Laboratory results and adverse events were reported as follows: • 2 subjects (7%) dropped out because of nausea and intolerance of the liquid. • Nausea, diarrhea, bloating, headache, fatigue and foot cramps occurred in a total of 6 subjects (20%) but were mild and transient. • There were no laboratory abnormalities.

**Conclusion:**

"The adverse effects of 9 grams of liquid AHCC per day, a higher dose than used in routine clinical applications, are minimal and the dose was tolerated by 85% of the subjects. This trial supports the anecdotal evidence that AHCC is a safe supplement in clinical practice and that the side effects are generally mild and tolerable."

## **Gastric & Colon Cancer Natural Medicine Journal Kawaguchi Y. Improved Survival of Patients With Gastric Cancer or Colon Cancer When Treated With Active Hexose Correlated Compound (AHCC): Effect of AHCC on Digestive System Cancer. 2009. September;1(1):1–6.**

### **Topic:**

Does AHCC (active hexose correlated compound) have an effect on the survival rate of patients with gastric cancer or colon cancer?

### **Background:**

Gastric cancer is the second-most-common cause of cancer death and colorectal cancer is the third-most-commonly diagnosed cancer worldwide. Current treatment options include surgical resection and/or chemotherapy regimens. However, both forms of cancer have poor survival rates. The 5-year survival for patients with unresectable metastatic colon cancer is less than 10%, and gastric cancer has an estimated age-adjusted survival rate of 33–44% in the United States and 51–54% in Japan. Tumor immunotherapy may provide another therapeutic option in an integrated approach. AHCC has demonstrated immune-stimulating activity and may be a potent biological response modifier (BRM) in cancer therapy.

**Study Type:** Observational study

### **Study Design:**

Prospective cohort study: Patients with a histopathological diagnosis of gastric or colon cancer were recruited to receive oral AHCC as a postoperative adjunctive therapy in conjunction with standard chemotherapy. The cumulative survival rates for gastric and colon cancer patients were analyzed by KaplanMeier method.

### **Subjects:**

132 patients diagnosed with gastric cancer, 113 patients diagnosed with colon cancer

### **Dosage:**

For Stage 1, 2, or 3 patients: 3 g of AHCC per day (1 g three times per day); for Stage 4 patients: 6 g of AHCC per day (2 g three times per day)

### **Results:**

AHCC supplementation resulted in the following difference in survival rates: • Improved cumulative 5-year survival rates for patients with gastric cancer (Stage 1A to Stage 3A) compared with other Japanese institutions • Improved cumulative 5-year survival rates for patients with colon cancer (Stage 2 to Stage 3A) compared with other Japanese institutions

### **Conclusion:**

“AHCC is a potent BRM that may improve survival in patients with early stage gastric or colon cancer and warrants further investigation as an adjunctive immunotherapeutic in gastric and colon cancer treatment.”